

# Shade perfection

Using the right tools, custom shade taking translates into a perfect match.

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It's always challenging for a technician to take a patient's custom shade. In fact, it is one of the hardest things to achieve perfectly, especially for a single central. But in my opinion, if we concentrate and remember to keep three goals in mind, our final outcome will be successful. Those three goals are:

1. What is the internal color? This will affect the final color.
2. What kinds of communication tools have we been given?
3. What considerations do the

patient's translucency, mamelon, enamel and incisal color play?

### STEPS TO CUSTOM SHADING

Our case study involves a 40-year-old female with square-shaped teeth. My goal with her case was to utilize a white zirconia coping from the GC Advanced Technologies Milling Center to camouflage her dark tooth preparation color (Fig. A). Note the color difference between the prepped tooth and adjacent teeth, and the challenge we have to cover the dark

prep in order to accomplish a blended appearance.

What is hue (Fig. B)? Wikipedia says, "Hue is one of the main properties of a color described with such a name as "red" or "yellow". In painting theory, it refers to a pure color, one without tint or shade."

So how can we determine the exact hue of a patient's tooth? A CT 23 shade tab is placed next to the patient's adjacent teeth for a color match. The pure white shade tab stands out against the dark prep color



### Chair Side Shade Selection Guide

#### Features

- Fan-out shade guide
- Duplicates the many distinctive colors and qualities seen in patients' teeth
- Incorporates coded photography of zirconia restorations
- Includes 23 full dentin shades and 70 enamel shades, 31 stains (occlusal, gingival, incisal), 8 horizontal color lines, 7 mamelon effects, 6 surface textures, 7 crack lines

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**Fig. A** The patient has a very dark prep shade, in the A5 zone. Light colored Aadva™ zirconia copings will effectively mask the dark shade.



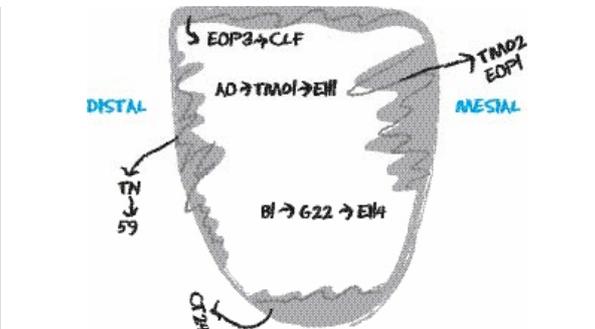
**Fig. B** For custom shade matching, the hue is checked with a shade tab.



**Fig. C** Using the ME 2 (tan) Chair Side Shade Selection Guide™ tab, the patient's adjacent mamelon shade is matched..



**Fig. D** Anterior translucency can also be checked against the Chair Side Selection Guide™ to try and mimic natural teeth translucency with a zirconia crown.



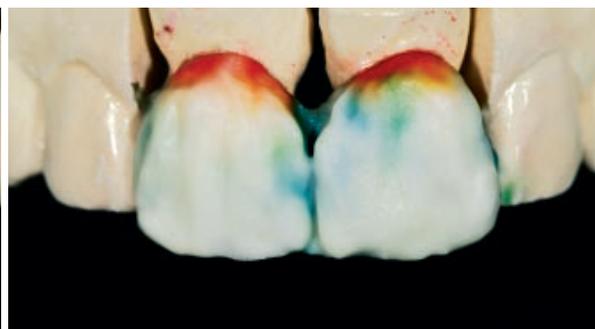
**Fig. E** A shade mapping guide is created for the patient's personal color match.



**Fig. F** The first dentin application with GC Initial™ ZR porcelain is layered onto the two Aadva™ copings and fired.



**Fig. G** Cervical Translucency and Translucency Neutral Enamel Opal are then applied.



**Fig. H** Enamel effective porcelain is layered onto the cervical applications.



**Fig. I** Translucency is checked against a mirrored backdrop.

of the two centrals.

The next step in the custom shade taking process is discovering the patient's individual tooth characteristics. For many of us it is very difficult to communicate all of the various characteristics we see in our patients' shade. That's why I invented the Chair Side Shade Selection Guide™. Not only does it cover enamel color possibilities, it also includes dentin, mamelon (Fig. C), translucency (Fig. D), occlusion stain, texture, crack lines, and horizontal color lines. Using this guide, we can measure the patient's teeth and get a good reading of all their special characteristics to ensure a positive color match.

Having all of this information available from one source makes it easy for the technician to draw a custom shade map (Fig. E) and translate the information to the application of porcelain layering powder onto the restoration.

After the first dentin application with GC Initial™ Porcelain, the crowns are placed on the model for color check (Fig. F). Cervical Translucency and Translucency Neutral Enamel Opal are then applied (Fig. G) before the Enamel Effective 12 application (Fig. H). Against the mirrored backdrop, the technician can double-check translucency (Fig. I). In the mouth, the finished restorations present a harmonious blending with the adjacent teeth (Fig. J).

### CONCLUSION

If we have good communication tools between the dentist and the laboratory, we can create a better product for the patient. Through e-mail photos and a handwritten custom shade matching chart, we were able to provide a close blend for the patient's new crowns with her adjacent teeth. The final outcome was even more predictable because we had a definition for each of her special characteristics. **lab**



**Fig. J** After cementation, the restorations are photographed in the mouth.

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